

Application No.: 10/088,823

Docket No.: (AP9691)64098-0917

AMENDMENTS TO THE CLAIMS

38. (Currently amended) Actuating unit for an electromechanically actuated disc brake for automotive vehicles that is mounted to a brake caliper in which two friction linings are arranged to slidably interact with each one lateral surface of a brake disc, wherein one of the friction linings is movable into engagement with the brake disc by the actuating unit directly by means of an actuating element and the other friction lining is movable into engagement with the brake disc by the effect of a reaction force generated by the brake caliper, wherein the actuating unit comprises:

an electric motor having a rotor,

a reducing gear engaged with the electric motor,

a freewheel mechanism coupled to the electric motor, wherein the freewheel mechanism is configured to exert a binding effect on a bearing which supports the motor rotor thereby preventing rotation movement of the bearing,

wherein both an outside ring and an inside ring of the bearing are extended on one side in such a fashion that they enter into a form-locking engagement with a clamping element of the freewheel mechanism,

wherein the inside ring of the bearing has a profile which permits a form-locking accommodation of the clamping element, and the outside ring has at least one radial recess and a subsequent slope or ramp which, along with the profiling, defines at least one clamping slot in which the clamping element is received,

wherein the freewheel mechanism is operable by means of an electromagnet.

39. (Previously presented) Actuating unit as claimed in claim 38, wherein the freewheel mechanism along with the bearing forms a subassembly.

Claim 40- 41 (canceled)

42. (Currently amended) Actuating unit as claimed in claim [41]38, wherein the clamping element is biased in the direction of the radial recess by means of a spring element.

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43.(Previously presented) Actuating unit as claimed in claim 42, wherein the spring element is configured as a circlip.

44.(Previously presented) Actuating unit as claimed in claim 42, wherein the spring element is configured as a leaf spring.

45. (canceled)

46.(Currently amended) Actuating unit as claimed in claim [45]38, wherein the electromagnet includes of an electromagnet and a tappet which is movable into a force-transmitting engagement with the clamping element of the freewheel mechanism.

47.(Previously presented) Actuating unit as claimed in claim 46, wherein the electromagnet is designed as a bistable electromagnet.

48.(Currently amended) Actuating unit as claimed in claim [40]38, wherein the clamping element is designed as a jamming roller.

49.(Currently amended) Actuating unit as claimed in claim [40]38, wherein the clamping element has the shape of a ball.

50.(Previously presented) Actuating unit as claimed in claim 38, wherein the bearing is designed as a ball bearing, a needle bearing, or a roller bearing.

51.(Previously presented) Actuating unit as claimed in claim 38, wherein a second reducing gear is provided between the electric motor and the reducing gear.

52.(Previously presented) Actuating unit as claimed in claim 51, wherein the electric motor, the first reducing gear and the second reducing gear are designed as at least two independent subassemblies.

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53.(Previously presented) Actuating unit as claimed in claim 51, wherein the electric motor, the first reducing gear and the second reducing gear are designed as one subassembly.

54.(Previously presented) Actuating unit as claimed in claim 38, wherein the first reducing gear is configured as a ball-and-thread drive assembly.

55.(Currently amended) Actuating unit as claimed in claim 38, further including an actuating element disposed between the reducing gear and one of the disk brakes, wherein the actuating element is formed by [the]a threaded nut of the ball-and-thread drive assembly.

56.(Previously presented) Actuating unit as claimed in claim 51, wherein the second reducing gear is arranged on a side of the electric motor remote from the brake linings.

57.(Previously presented) Actuating unit as claimed in claim 51, wherein the second reducing gear is configured as a planetary gear.

58.(Previously presented) Actuating unit as claimed in claim 57, wherein the second reducing gear is configured as a planetary gear with stepped planet wheels.

59.(Currently amended) Actuating unit as claimed in claim 55, wherein a guide member is provided which embraces the threaded nut of the ball-and-thread drive assembly, [which]wherein the ball-and-thread drive assembly is supported on a gearbox case that ~~accommodates the ball and thread drive assembly~~, and wherein on which the a threaded spindle is axially supported by said threaded nut.

60.(Previously presented) Actuating unit as claimed in claim 59, wherein the axial support of the threaded spindle is carried out by means of a radial collar.

61. (canceled)

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62.(Previously presented) Actuating unit as claimed in claim 59, wherein an elastic seal is interposed between the threaded nut and the guide member.

63.(Currently amended) Actuating unit as claimed in claim 57, wherein a sun wheel of the planetary gear is designed on the rotor, and wherein said planetary gear includes planet wheels, wherein [while] the planet wheels are mounted in a planet cage that is in a force-transmitting connection with [the]a threaded spindle, and whereas each planet wheel in said planet wheels, is and are comprised of ~~each one~~ a first planet wheel of large diameter that is in engagement with the sun wheel and ~~each one~~ a second planet wheel of small diameter that is in engagement with a ring gear.

64.(Currently amended) Actuating unit as claimed in claim 63, wherein the ring gear of the planetary gear is formed of an internal toothing in a cover which represents a case of the planetary gear and is mounted on [the]a casing of the electric motor.

65.(Previously presented) Actuating unit as claimed in claim 63, wherein the transmission of force between the planet cage and the threaded spindle is effected by means of a form-locking plug coupling.

66.(Currently amended) Actuating unit as claimed in claim 63, wherein the planet cage is mounted in [the]a cover by means of a radial bearing.

67.(Currently amended) Actuating unit as claimed in claim 63, wherein [the]a form-locking plug coupling is connected to the planet cage in a torsion-proof, radially yielding and flexible fashion.

68.(Previously presented) Actuating unit as claimed in claim 59, wherein the threaded spindle is of a multi-part design.

69.(canceled)

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70.(Previously presented) Actuating unit as claimed in claim 38, wherein the electric motor is configured as an electronically commutated electric motor energized by a permanent magnet.

71.(Previously presented) Actuating unit as claimed in claim 38, wherein the electric motor is configured as a switched reluctance motor.

72.(Previously presented) Actuating unit as claimed in claim 38, wherein a position detection system is provided which permits detecting the position of the rotor.

73.(Previously presented) Actuating unit as claimed in claim 72, wherein the position detection system includes a Hall sensor.

74.(Previously presented) Actuating unit as claimed in claim 72, wherein the position detection system includes a magnetoresistive element.